RESEARCH ARTICLE

NURSING STUDENTS PERCEIVED STRESS AND ACADEMIC ACHIEVEMENT: THE ROLE OF EMOTIONAL INTELLIGENCE

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ARTICLE INFO	ABSTRACT
	Stressors facing nursing students has adverse consequences on their academic and professional as well it may lead to attrition from nursing programs, and shortage of nurses. Emotional intelligence (EI) is set of abilities enables a person to generate, recognize, express, understand, and evaluate their own, and others, emotions. The current study aims at determining nursing students' emotional intelligence and its relationship with students' perceived stress level and their academic achievement. Descriptive corelational cross-sectional design was used to survey 118 nursing students (63 Stream I and 55 Stream II). Students were moderately stressed, with EI level significantly correlated with their perceived stress score ($r = -0.30$, $p = 0.001$) and their GPA ($r=.308$, $P=.005$). Emotional intelligence may contribute to the identification and implementation of appropriate interventions and strategies to help nursing students develop optimal personal and professional personality that enable them to deal effectively with stressors and consequently improve their academic achievement.

INTRODUCTION

With the rapidly changing and stressful health care environment, nursing students need to be able to function effectively in various settings such as classrooms and clinical settings. They need to be prepared by the skills necessary for full utilization of their abilities, exercise good judgment, complete promptly all responsibilities relevant to patient care, and develop mature, sensitive and therapeutic relationships (Malterer, Glass, and Newman, 2008). Studies have shown that nursing students suffer from moderate to high stress, because they need to learn new professional knowledge and skills (Chan *et al.,* 2010), and being involved in emotionally driven situations. A study in Hong Kong concluded that undertaking a nursing program leads to increased level of stress, burnout and psychological morbidity and that was largely related to individual personality and coping traits (Watson, Deary, Thompson, Li , 2008). Additionally, more than 10% of nursing college students experience moderate to severe anxiety and nearly one-third suffer from depression symptoms (Zhang *et al.,* 2007). Nursing in Saudi Arabia is growing profession, which has gained the government interest and attention (Al-Omar). Nursing students are considered and are prepared to be an important part of the health care reform in Saudi Arabia. This demands nursing students to academically perform up to international professional standers, build their professional knowledge and skills that make them able to be professional competent in interacting with patients, families, health care members and many others with different educational, ethnic and cultural backgrounds. These all may put more loads on Saudi nursing students and can cause more stress. Additionally, the way that academic performance is measured is through the ordinal scale of grade point average (GPA). A student's GPA determines many things such as class rank,

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entrance to graduate school and job opportunities. Research has been done looking at the correlation of many stress factors that college students' experience and its effects on their GPA. A name was given to such stress factors by Hatcher and Prus (1991) referred to these stress factors as academic situational constraints. One important student characteristic that been identified as an important key for professional success is Emotional Intelligence (EI).

Emotional Intelligence (EI) is defined as a set of interrelated skills concerning" the ability to perceive accurately, appraise, express emotion; the ability to access and/or generate feelings when they facilitate thoughts; the ability to understand emotion and emotional knowledge; and the ability to regulate emotion to promote emotional and intellectual growth" (Wong and Law, 2002, Page. 10). Research has found that individuals with higher emotional intelligence express their feelings and desire more often, and consequently, provide a wider social network and social support for themselves. Social support, in turn, enhances mental health and protection against stress (Ciarochi, Deane, Anderson, 2002). Boussiakou and colleagues concluded that emotional intelligence is a required variable to decrease anxiety and frustration and increase levels of confidence and courage (Boussiakou, Boussiakou, Kalkani, 2008). Emotional intelligence been also found to reduces stress among health care workers and it can predicts 66% of key success factors among health care workers. High emotional intelligence health care workers were more effective in a number of key performance areas, including stress management (Wright, 2003).

A study conducted by Miri and Bourang measured the relationship between emotional intelligence and academic anxiety, the study showed that there was a significant relationship between emotional intelligence and academic anxiety (Miri, Bourang, 2007). Another study examined the role of perceived emotional intelligence in the use of stress-coping strategies in the mental health of nursing students. The study highlighted the importance of perceived emotional intelligence in students' coping skills. It showed that as emotional

repair, as a component of EI, was a main predictor of nursing students' mental health (Montes-Berges, Augusto, 2007). Emotional intelligence been reported to be a factor that leads to positive attitudes, greater adaptability, improved relationships increased orientation towards positive values and increase work success (Akerjordet, Severinsson, 2007). Therefore the aim of the current study is determine the nursing students' perceived stress level, their emotional intelligence and its relationship with the students 'academic achievement

MATERIAL AND METHODS

Design: Descriptive Cross-sectional Correlational design was implemented to determine the nursing students' perceived stress level, their emotional intelligence and its relationship with the students 'academic achievement at the College of Nursing- King Saud bin Abdulaziz University for Health Sciences- Eastern Region of Saudi Arabia.

Subjects: The College grants a baccalaureate of nursing. The program is a standard four-year generic baccalaureate program that incorporates a variety of learning experiences and knowledge with nursing professional education as a theoretical basis. The program has two different streams. The first stream is Stream I (SI) called regular program and is designed for high school graduates. The program is consisted of 4 years (eight levels). The first two years is called pre-professional program and focuses on the basic sciences subjects. The last two-year is called professional program and focuses on the nursing sciences. The second stream is Stream II (SII) called accelerated program and it is designed for students with a previous bachelor degree in Science. The program consisted of two and half year (5 levels). basic sciences as well as nursing courses and they It is where students are to acquire knowledge and skills necessary to provide care for complex health problems of individuals, families or communities. About 200 students from both streams I and II in different levels of the nursing program at the college were approached during the last two semesters (academic year 2011-2012 and 2012-2013) during their break time and invited to participate in the study. After explanation of the study aim and the study questionnaires, questionnaires were distributed to interested students (about 150).

Instruments

Students' Emotional Intelligence was measured by Wong and Law 16 items emotional intelligence questionnaire. Wong and Law (2002) used Mayer and Salovey (1997) to define Emotional Intelligence as a set of interrelated skills concerning" the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thoughts; the ability to understand emotion and emotional knowledge; and the ability to regulate emotion to promote emotional and intellectual growth" Wong and Law (2002, p10). Based on Mayer and associates definition of EI, Wong and Law developed the 16 item Emotional Intelligence Questionnaire that used in the current study to measure students' EI. The instrument measures EI in four dimensions: self-emotion appraisal, others' emotion appraisal, uses of emotions in solving problems, and regulation of emotion. Reliability estimates (coefficient alphas) for the four dimensions were 89, .88, .76, and .85, respectively. The response format of the EI instrument is a 7-point Likert-type scale starting with strongly disagree (1) to strongly agree (7). Scoring of the EI questionnaire was not reported, in the current study the EI score was calculated by summing all the items giving a range of (16-112) as an expected scores. Additionally, we looked at the total score of each subscale (4-28) as each subscale included four items on a scale from 1 to 7.

Perceived stress was measured by Cohen Perceived Stress Scale, developed by Cohen, Kamarck, and Mermeistein (1983). The first version of the Perceived Stress Scale is a fourteen-item scale that asks the respondents to answer a series of questions as they pertained to them in the last month. The scale was used in previous researches and modified to be only a ten-item scale (Cohen, and Williamson, 1988). The method of answering the questions is a likert scale format with answers ranging from 0 being an answer of never to 4 being an answer of very often. The scale yields a single score and a higher score is indicative of greater levels of perceived stress, with items 4, 5, 7, 8, being reversed scored. The Perceived Stress Scale has been shown to be reliable and to measure only the amount of stress, independent of other constructs like depression. The possible score of perceived stress was from 0 to 40.

Students' Academic Achievement: The way that academic performance is measured is through the ordinal scale of A Cumulative Grade Point Average (GPA) and it is a calculation of the average of all of a student's grades for all semesters and courses completed up to the current academic semester.

Data Analysis: descriptive statistics were used to describe the subjects' demographics as well as the study variables. Independent samples t test was used to compare between stream I and II, Pearson correlation coefficient was used to test the correlation between students' perceived stress score, emotional intelligence and their GPA.

RESULTS

Only 118 students have returned the questionnaires giving a 78% response rate. Students were in different levels of the nursing program. Students' mean age was (21.3 ± 2.82), 21% were married and about 17% have at least one child. Students were moderately stressed (21.5 ± 4.8), they were scored about 79% emotionally intelligent with a mean EI level of 80.66 ± 16.05. Only 81 students had reported the GPA and it was between 2.6 and 4.93 with a range of 2.33.   Additionally, results showed that there was statistically significant difference between stream I and Stream II students in their level of emotional intelligence where stream II demonstrated higher total emotional intelligence score (Fig. 1).
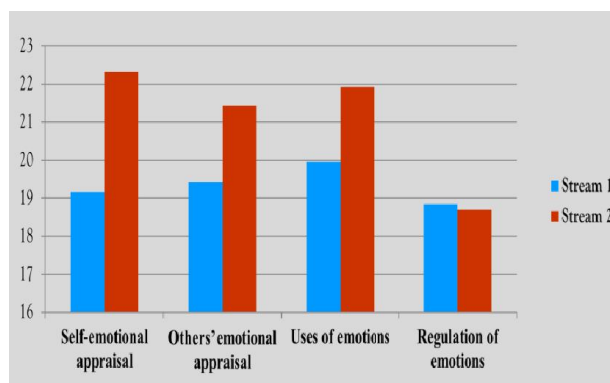

Fig. 1. Emotional Intelligence Subscales among Stream 1 and Stream 2

Table 1. Participants Demographic Characteristics

Student's Demographics		No.	%
Stream	Stream 1	63	53.4
	Stream 2	55	46.6
Level in the program	Foundation	13	11
	Level 2	49	41.5
	Level 3	24	20.3
	Level 4	18	15.3
	Level 7	14	11.9
Marital Status	Single	93	78.8
	Married	25	21.2
Having Children	No	98	83.1
	Yes	20	16.9

Students' high EI level was significantly correlated with low perceived stress score ($r = -0.30$, p = 0.001). No correlation was found between students' GPA and their perceived stress level or student's GPA. Students' high GPA was only correlated with one subscale of the EI questionnaire which is "use of emotions in solving problems" (r=.308, P=. 005).

DISCUSSION

Students reported that they were moderately stressed (21.5 ± 4.8), scored about 79% on emotional intelligence questionnaire. Students' high emotional intelligence was significantly correlated with low level of perceived stress ($r = -0.30$, p = 0.001) and their high GPA was significantly correlated with their ability to understand their emotions (r=.308, P=. 005). The results of the study is supported by literature that has indicated the growing body of evidence on stress among nursing students (Gibbons, Dempster and Moutray, 2010, Goff, 2011, Reeve *et al.,* 2013, Sohail, 2013). Some of the sources of stress experienced by nursing students are experienced by students generally such as examinations and assessments (Howard, 2001). Additional stressors faced by nursing students include developing clinical skills, time pressures within which they are expected to operate on placement, together with evaluations of clinical experience, are frequently reported (Jack 1992, and Shaban, Khater, Akhu-Zaheya, 2012). Status as a student on placement has been reported, and aligned to this are nursing staff attitudes towards students on placement (Howard 2001) In relation to workload, nursing students also experience longer hours of study and an associated lack of free time (Lo 2002). In the current study about 20% of the students are married and have to take care of a family with at least one child, and that was reported to add more stress on the student's academic life of a female students with children (Pryjmachuk and Richards 2007) Additionally, the nature of the culture in Saudi Arabia, where there is great deal and value of the social and family life that females has to participate in adds more demands and constrains on the student's life. However, this family life could be a source of support for the student that can't be ignored. Previous research showed that high levels of personal and academic stressors were evident in nursing students, but not significant predictors of academic performance (Goff, 2011). This supports the study results as the students in the current study been shown to perceive moderate level of stress but was not correlated to their academic achievement. This may refers to the importance of little stress that get the best out of students and help them focus their effort and perform at their peak. This moderate stress keeps people on their toes, enables them to juggle multiple tasks and puts them on high alert for potential problems. However, the level of perceived stress in this

study suggests that there is a need to monitor the emotional demands of students' work, provide adequate support, clinical supervision and mentorship for nursing students while on clinical placements. This will enable students to recognize and deal with their emotional responses to work and to the emotions of others (Akerjordet and Severinsson, 2004; Freshwater and Stickley, 2004).

The relationship between EI and perceived stress is congruent with previous studies. Students' emotional intelligence was highly correlated with their level of perceived stress (Table 3). Pau and Croucher (2003) found that dental students with high EI were more able to manage challenging emotional encounters with patients and thus experienced less stress. Fewer symptoms of burnout also were reported by female nurses with a relatively high EI profile. It would appear that individuals with high EI are better able to regulate and express their own emotions and read the deeper emotional meanings of others with whom they interact. As a consequence, they are less likely to be overwhelmed by stress and are at a lower risk of developing mental health problems (Cherniss, 2002). Student's high GPA was also significantly correlated with student's ability to understand their emotions. A considerable amount of literature has been focused on establishing the relationship between EI and students academic achievement. It has been testing whether measures of EI act as predictors of student academic success. Several studies have found a positive association between EI and academic achievement (Jaeger, 2003 and Parker *et al.,* 2004). Other studies, focusing specifically on first year university students have produced mixed results (Newsome, Day and Catano, 2000 and O'Connor and Little, 2003). To date, the evidence is unclear and few empirical studies have investigated the relationship between emotional intelligence and students' academic achievement. Interestingly, the current study shows that emotional intelligence is significantly correlated to student's age, where older students were more emotionally intelligent. In relation to the type of the program (stream I and Stream II), the study showed that stream II students who are older, have previous university degree were more emotionally intelligence and also had higher GPA. This is supported by Goleman, (2001) as It was emphasized emotional intelligence and competencies are not mere innate talents, but learned capabilities that must be developed to achieve outstanding performance (Goleman, 2001). In conclusion, nursing students experience stress, sources of this stress is needed to be identified and so it does not impact the student experiences while they are in school or their lives and journeys as professional nurses. Faculty can help students by their interactions with students to improve student confidence. Additionally, interventions in the clinical environment may be used to enhance students' emotional intelligence ability. Impact from such development may be used in the future to not only improve the

Table 2. Mean Students' Perceived Stress Score, Emotional Intelligence and GPA

Study Variables	All Subjects	Stream I (n=)	Stream II (n=)	*t*
Perceived Stress Score	21.55±4.84	21.17±4.33	21.98±5.37	0.89
Total EI Score	80.66 ±16.05	77.41±14.57	84.38±16.97	2.39 [*]
Self-emotional appraisal	20.64 ±5.35	19.17±4.92	22.32±5.36	3.32 [**]
Others' emotional appraisal	20.36±5.50	19.42±5.37	21.43±5.51	2.00 [*]
Uses of emotions	20.44±5.20	19.96±4.77	21.92±5.51	2.06[*]
Regulation of emotions	18.77±4.65	18.84±4.53	18.69±5.26	0.16
GPA	3.90±0.56	3.84±0.59	4.01±0.51	1.27

[*] Significant level less than .05 and [**] Significant level less than .001

Table 3. Relationship between EI and EI subdcales, perceived stress and academic achievement

Variable		Total EI Score	Self-emotional appraisal	Others' emotional appraisal	Uses of emotions	Regulation of emotions
Perceived Stress	r	-.255	-.255	-.056	-.267	-.362
	Sig.	.006	.006	.551	.004	.000
	N	118	118	118	118	118
GPA	r	.257	.156	.186	.308	.113
	Sig.	.021	.163	.096	.005	.313
	N	81	81	81	81	81

quality of nursing care, but also potentially limit the negative effects of high-stress environments on nurses (Codier, Freitas and Muneno, 2013). Therefore, nursing programs should include curriculum components on emotional intelligence and values the importance of teaching nursing students emotional intelligence skills. Future research needs to be conducted in a variety of nursing education programs.

REFERENCES

Akerjordet, K., Severinsson, E. 2007. Emotional intelligence: a review of the literature with specific focus on empirical and epistemological perspectives. Journal of Clinical Nursing, 16(8):1405-1416.

Al-Omar, B.A. 2004. Knowledge, attitudes and intention of high school students towards the nursing profession in Riyadh city, Saudi Arabia. Saudi Med Journal, 25(2):150-155.

Boussiakou, L.G., Boussiakou, Z., Kalkani, E.C. 2008. Student development using emotional intelligence. Word Trans Technol Edu, 79(1):18–23).

Chan, K.L., So, W.K.W., Fong, D.Y.T. 2010. Hong Kong baccalaureate nursing students' stress and their coping strategies in clinical practice. Journal of Professional Nursing, 25 (5): 307–313.

Cherniss, C. 2002. Emotional intelligence and the good community. American Journal of Community Psychology, 30,1-11.

Ciarochi, J., Deane, F.P., Anderson, S. 2002. Emotional intelligence moderates the relationship between stress and mental health. Pers Individ Dif. 32:197–209.

Codier, E., Freitas, B., Muneno, L. 2013. Developing emotional intelligence ability in oncology nurses: a clinical rounds approach.Oncology Nursing Forum, 40(1):22-29.

Freshwater, D., Stickley, T. 2004. The heart of the art: emotional intelligence in nurse education. Nursing Inquiry, 11(2): 91-98.

Gibbons, C., Dempster, M., Moutray, M. 2010. Stress, coping and satisfaction in nursing students. Journal of Advanced Nursing, 67 (3): 621–632.

Goff, A. 2011. Stressors, academic performance, and learned resourcefulness in baccalaureate nursing students. International journal of nursing education scholarship, 8 (1): 1–20.

Hatcher, L., Prus, J. S. 1991. A measure of academic situational constraints: Out-of-class circumstances that inhibit college student development [Electronic version]. Educational and Psychological Measurement, 51(4), 953-963.

Howard, D.A. 2001. Student nurses' experience of project 2000. Nursing Standard, 15(48): 33–38.

Jaeger, A.J. 2003. Job competencies and the curriculum: an inquiry into emotional intelligence in graduate professional education. Research in Higher Education, 44,615–639.

Lo, R. A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: an Australian case study. 2002. Journal of Advanced Nursing, 39(2):119–126.

Malterer, M.B, Glass, S.J, Newman, J.P. 2008. Psychopathy and Trait Emotional Intelligence. Personal Individual Differences, 44(3):735-745.

Mayer, J., Salovey, P., Caruso, D. Emotional IQ test (CD ROM). *Needham, MA: Virtual Knowledge.* 1997.

Miri, M.R, Bourang, M.A. 2007. The relationship between emotional intelligence and academic anxiety among high school students in South Khorasan province. Scientific Journal of Birjand University of Medical Sciences, 14(1):54–59.

Montes-Berges, B., Augusto, J.M. 2007. Exploring the relationship between perceived emotional intelligence, coping, social support and mental health in nursing students. J Psychiatric Mental Health Nursing, 14(2):163-71.

Newsome, S., Day, A., Catano, V. 2000. Assessing the predictive validity of emotional intelligence. Personality and Individual Differences, 29, 1005–1016.

O'Connor, R.M., Little, I.S. 2003. Revisiting the predictive validity of emotional intelligence: self-report ability-based measures. Personality and Individual Differences, 35, 1893–1902.

Parker, J.D., Summerfeldt, L.J., Hogan, M.J., Majeski, S.A. 2004. Emotional intelligence and academic success: examining the transition from high school to university. Personality and Individual Differences, 36, 1321–1330.

Pau, A., Croucher, R. 2003. Emotional intelligence and perceived stress in dental undergraduates. Journal of Dental Education, 67, 1023–1028.

Pryjmachuk, S., Richards, D. A. 2007. Predicting stress in pre-registration nursing students. British Journal of Health Psychology, 12, 125–144.

Reeve, K.L., Shumaker, C.J., Yearwood, E.L., Crowell, N.A., Riley, J.B. 2013. Perceived stress and social support in undergraduate nursing students' educational experiences. Nursing Education Today, 33(4):419-424.

Shaban, I.A, Khater, W.A., Akhu-Zaheya, L.M. 2012. Undergraduate nursing students' stress sources and coping behaviors during their initial period of clinical training: a Jordanian perspective. Nursing Education and Practice,12(4):204-209.

Sohail, N. 2013. Stress and academic performance among medical students. College of Physicians and Surgeons, 23(1):67-71.

Watson, R., Deary, I., Thompson, D., Li, G. 2008. A study of stress and burnout in nursing students in Hong Kong: a questionnaire survey. International Journal of Nursing Studies, 45(10):1534-42.

Wong, C., Law, K. 2002. The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. The Leadership Quarterly, 13(3):243-274.

Wright, S. 2003. Born Emotional Quotient Inventory. Toronto: Multi-health Systems, p. 2. Development report.

Zhang, L., Guo, L.X., Li, Y., Zhu, Y.F., Li, Q., Chen, K.J., Chen, M.J. 2007. The effect of mental education on the mental health of nursing undergraduates in military university. Chinese Journal of Behavioral Medical Science, 16(2): 153–154.

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